



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,821	05/26/2006	Kenji Hayashi	128189	7402
25944 7590 03/04/2009 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER				
EVANS, GEOFFREY T				
ART UNIT		PAPER NUMBER		
2852				
MAIL DATE		DELIVERY MODE		
03/04/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/580,821

Applicant(s)

HAYASHI ET AL.

Examiner

GEOFFREY T. EVANS

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4-8, 10, 11 and 13-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-8, 10-11, and 13-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB008)
Paper No(s)/Mail Date 12/18/2008
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6, 10-11, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Hara et al. (JP publication 2002-304102).

Regarding claim 6, and claim 14 depending therefrom, Hara et al. disclose an image forming apparatus, comprising:

a photoreceptor drum on which, in a driven state, an electrostatic latent image of an image for image formation is optically formed (**PR; see paragraph 10 and figure 1**);

developing means which, in a driven state, toner-develops the electrostatic latent image formed on the photoreceptor drum (**G; see paragraph [0027], and figure 1**);

transfer means for, in a driven state, transferring to an image recording medium the developed image obtained by toner development by the developing means (**BM; see paragraph [0028], figure 1**); and

control means (**C; see paragraph [0029]**) which, when instruction information for instructing formation of the developed image on a plurality of sheets of the image recording medium is inputted, controls driving of the photoreceptor drum, the developing

means and the transfer means such that formation of the developed image on the plurality of sheets of the image recording medium according to the instruction information is continuously performed (**see paragraph [0042] for all limitations**), and controls driving of at least one of the photoreceptor drum, the developing means or the transfer means such that, in a course of the continuous image formation, driving of at least one of the photoreceptor drum, the developing means or the transfer means is halted at least once (**see paragraph [0042] for all limitations**);

specification means for specifying whether a type of the image recording medium is a first type of predetermined regular size, or a second type of non-regular size, other than the regular size (**Hara, et al. specify whether regular paper or pasteboard is being used; see paragraphs 40, 41, and 48-49; regular paper and pasteboard are different thickness; Hara, et al. assume this; see paragraphs 16-17; since thickness reads on size, Hara, et al. specify whether a regular size is being used**), wherein,

when the type of the image recording medium is specified to be the second type by the specification means, the control means controls driving of at least one of the photoreceptor drum, the developing means or the transfer means such that, in the course of the continuous image formation, driving of at least one of the photoreceptor drum, the developing means or the transfer means is halted at least once (**see paragraph 42, and 48-49**).

Regarding claim 14, Hara et al. disclose the image forming apparatus of claim 6, further comprising inputting means for inputting information which indicates the type of the image recording medium (**see paragraph [0041]**), wherein

the specification means performs the specification on the basis of the type of the image recording medium inputted by the inputting means (**see paragraph [0042], and the last few lines of paragraph [0010]**).

Regarding claim 10, and claim 11 depending therefrom, Hara et al. disclose an image formation method for an image forming apparatus, comprising a photoreceptor drum on which, in a driven state, an electrostatic latent image of an image for image formation is optically formed (**PR; see paragraph [0010], and figure 1**); developing means which, in a driven state, toner-develops the electrostatic latent image formed on the photoreceptor drum (**G; see paragraph [0027], and figure 1**); and transfer means for, in a driven state, transferring a developed image obtained by toner development by the developing means to an image recording medium (**BM; see paragraph [0028], figure 1**), including:

when instruction information for instructing formation of the developed image on a plurality of sheets of the image recording medium is inputted, controlling driving of the photoreceptor drum, the developing means and the transfer means such that formation of a developed image on a plurality of sheets of the image recording medium according to the instruction information is continuously performed (**see paragraph [0042] for all limitations**), and controlling driving of at least one of the photoreceptor drum, the

developing means or the transfer means such that, in a course of the continuous image formation, driving of at least one of the photoreceptor drum, the developing means or the transfer means is halted at least once **(see paragraph [0042] for all limitations)**;

specifying whether a type of the image recording medium is a first type of predetermined regular size, or a second type of non-regular size other than the regular size **(Hara, et al. specify whether regular paper or pasteboard is being used; see paragraphs 40, 41, and 48-49; regular paper and pasteboard are different thickness; Hara, et al. assume this; see paragraphs 16-17; since thickness reads on size, Hara, et al. specify whether a regular size is being used)** and

controlling driving of at least one of the photoreceptor drum, the developing means or the transfer means such that, in the course of the continuous image formation, driving of at least one of the photoreceptor drum, the developing means or the transfer means is halted at least once **(see paragraphs 42 and 48-49)**.

Regarding claim 11, Hara et al. disclose the image formation method of claim 10, further including:

controlling at least one of the photoreceptor drum, the developing means or the transfer means such that, every time a number of continuously image-formed sheets reaches a prescribed number of sheets of the image recording medium, at least one of the photoreceptor drum, the developing means or the transfer means is halted for a prescribed period of time **(see paragraph [0042] for all limitations)**.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-5, 7-8, 13, and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al. (JP publication 2002-304102).

Regarding claim 1, and claims 4-5, 7-8, 13, and 15 depending therefrom, Hara et al. disclose an image forming apparatus, comprising:

a photoreceptor drum on which, in a driven state, an electrostatic latent image of an image for image formation is optically formed (**PR; see paragraph 10 and figure 1**);

developing means which, in a driven state, toner-develops the electrostatic latent image formed on the photoreceptor drum (**G; see paragraph [0027], and figure 1**);

transfer means for, in a driven state, transferring to an image recording medium the developed image obtained by toner development by the developing means (**BM; see paragraph [0028], figure 1**); and

control means (**C; see paragraph [0029]**) which, when instruction information for instructing formation of the developed image on a plurality of sheets of the image recording medium is inputted, controls driving of the photoreceptor drum, the developing means and the transfer means such that formation of the developed image on the plurality of sheets of the image recording medium according to the instruction information is continuously performed (**see paragraph [0042] for all limitations**), and

controls driving of the photoreceptor drum, and the transfer means such that, in a course of the continuous image formation, driving of the photoreceptor drum, and the transfer means are halted at least once (**see paragraph [0042] for all limitations**); and

a fuser, which fixes the developed image transferred to the image recording medium on the image recording medium by heat (**see paragraph [0034]; and figure 2**); and wherein

the control means controls the photoreceptor drum, and the transfer means such that, every time a number of continuously image-formed sheets reaches a prescribed number of sheets of the image recording medium, the photoreceptor drum, and the transfer means are halted for a prescribed period of time (**see paragraph [0042]**), and

the prescribed number of sheets and the prescribed period of time are determined as those with which image formation on the image recording medium can be continuously performed by the prescribed number of sheets (**see paragraph [0042]**) without the fuser exceeding a prescribed temperature (**see paragraph [0020]**).

Hara, et al., do not disclose that the developing means is controlled, along with the photoreceptor drum and the transfer means, to halt at least once during continuous image formation, or to do so every time a number of continuously image-formed sheets reaches a prescribed number of sheets of the image recording medium.

It would have been obvious to one of ordinary skill in this art at the time the invention was made, to modify the invention of Hara et al. such that the developing means is controlled, along with the photoreceptor drum and the transfer means, to halt

at least once during continuous image formation, and to do so every time a number of continuously image-formed sheets reaches a prescribed number of sheets of the image recording medium, and moreover to do so at the same time the photoreceptor drum and the transfer means are halted, since this would yield the predictable result of allowing the invention operate normally; or by experimenting to optimize the control sequence, to save power, and to avoid negative effects such as unnecessary wear of the developing means. The photoreceptor drum is already being halted at least once (**see paragraph [0042]**), and the developing means can not be used while the photoreceptor drum is halted, therefore there is a period of time when the developing means can be halted without interfering with machine operation.

Regarding claim 4, and claims 5, 7-8, 13, and 15 depending therefrom, Hara et al. disclose the image forming apparatus of claim 1, further comprising:

specification means for specifying a type of the image recording medium (**see paragraph [0041]**),

memory means which stores in advance the prescribed number of sheets and the prescribed period of time according to the type of the image recording medium for each type of the image recording medium (**see the last few lines of paragraph [0010]**), wherein

the control means carries out the control by reading out the prescribed number of sheets and the prescribed period of time according to the type of the image recording

medium that has been specified by the specification means from the memory means **(see paragraph [0042])**.

Regarding claim 5, and claim 13 depending therefrom, Hara et al. disclose the image forming apparatus of claim 4, wherein the type of the image recording medium is the type according to at least one of a size of the image recording medium, a thickness of the image recording medium, or a material of the image recording medium **(see paragraphs [0040] and [0048]-[0049]; regular paper and pasteboard are different thickness and composition; Hara, et al. assume different thickness; see paragraphs 16-17; since thickness reads on size, Hara, et al. specify whether a regular size is being used; it's worth noting that rectangular recording sheets cannot vary in any respect other than size, thickness, and composition, therefore different types of recording medium vary in these respects)**.

Regarding claim 13, Hara et al. disclose the image forming apparatus of claim 5, further comprising inputting means for inputting information which indicates the type of the image recording medium **(see paragraph [0041])**, wherein

the specification means performs the specification on the basis of the type of the image recording medium inputted by the inputting means **(see paragraph [0042], and the last few lines of paragraph [0010])**.

Regarding claim 7, and claim 15 depending therefrom, Hara et al. disclose the image forming apparatus of claim 4, wherein the specification means further specifies whether the type of the image recording medium is a first type of predetermined regular

size, or a second type of non-regular size other than the regular size (**Hara, et al. specify whether regular paper or pasteboard is being used; see paragraphs 40, 41, and 48-49; regular paper and pasteboard are different thickness; Hara, et al. assume this; see paragraphs 16-17; since thickness reads on size, Hara, et al. specify whether a regular size is being used**), and

the control means controls driving of at least one of the photoreceptor drum, the developing means or the transfer means such that, in the course of the continuous image formation, driving of at least one of the photoreceptor drum, the developing means or the transfer means is halted at least once (**see paragraph [0042]**).

Regarding claim 15, Hara et al. disclose the image forming apparatus of claim 7, further comprising inputting means for inputting information which indicates the type of the image recording medium (**see paragraph [0041]**), wherein

the specification means performs the specification on the basis of the type of the image recording medium inputted by the inputting means (**see paragraph [0042], and the last few lines of paragraph [0010]**).

Regarding claim 8, Hara et al. disclose the image forming apparatus of claim 4, further comprising inputting means for inputting information which indicates the type of the image recording medium (**see paragraph [0041]**), wherein

the specification means performs the specification on the basis of the type of the image recording medium inputted by the inputting means (**see paragraph [0042], and the last few lines of paragraph [0010]**).

Claims 1, 4-5, 7-8, 13, and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al. (JP publication 2002-304102), in view of Nakamura, et al. (4,113,374).

See the foregoing rejection of claims 1, 4-5, 7-8, 13, and 15 for all limitations except the following.

Regarding claim 1, Hara, et al., do not disclose that the developing means is controlled, along with the photoreceptor drum and the transfer means, to halt at least once during continuous image formation, or to do so every time a number of continuously image-formed sheets reaches a prescribed number of sheets of the image recording medium.

Nakamura, et al., disclose the operating of the developing means being suspended when not being used (**see column 28, lines 49-68**).

It would have been obvious to one of ordinary skill in this art at the time the invention was made, to modify the invention of Hara, et al., such that the operating of the developing means were suspended when not being used, in order to avoid paper jams or unnecessary development, as discussed by Nakamura, et al. (**see column 28, lines 49-68**).

Also, see the comment immediately after the following rejection.

Claims 1, 4-5, 7-8, 13, and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al. (JP publication 2002-304102), in view of Sugaya (JP pub

63-253971; the following remarks are made with respect to the English translation of the abstract of Sugaya, included with the Japanese document mailed herewith).

See the first foregoing rejection of claims 1, 4-5, 7-8, 13, and 15 for all limitations except the following.

Regarding claim 1, Hara, et al., do not disclose that the developing means is controlled, along with the photoreceptor drum and the transfer means, to halt at least once during continuous image formation, or to do so every time a number of continuously image-formed sheets reaches a prescribed number of sheets of the image recording medium.

Sugaya discloses stopping the driving of the developing means when it is not needed (**see abstract**).

It would have been obvious to one of ordinary skill in this art at the time the invention was made, to modify the invention of Hara, et al., such that the driving of the developing means is stopped when it is not needed, in order to conserve toner, as discussed by Sugaya (**see abstract**).

Under these last two modifications, since the photoreceptor drum is already being halted at least once (**see paragraph [0042]**), and the developing means can not be used while the photoreceptor drum is halted, it follows that the developing means is controlled, along with the photoreceptor drum and the transfer means, to halt at least once during continuous image formation, and to do so every time a number of continuously image-formed sheets reaches a prescribed number of sheets of the image

recording medium, and moreover to do so at the same time the photoreceptor drum and the transfer means are halted.

Response to Arguments

Applicant's arguments filed 12/2/2008 have been fully considered but they are not persuasive.

Regarding Applicant's arguments in the last paragraph on page 9 of the response, pertaining to claim 1, Examiner concedes that the current amendment overcomes the prior rejection, and submits the new foregoing rejections as a result of further search and consideration necessitated by the amendment.

Regarding Applicant's arguments in the first full paragraph on page 10 of the response, pertaining to claims 6 and 10, Examiner respectfully submits that Hara, et al., disclose the disputed limitations. Hara, et al., specifies whether regular paper or pasteboard is being used (**see paragraphs 40, 41, and 48-49**). Applicant correctly notes that regular and bond paper may be of the same thickness. However, regular paper and *pasteboard* have different thickness, as Hara, et al. assume (**see paragraphs 16-17**). Also note that thickness meets the limitation of 'size.' Recording media are 3-dimensional objects, whose size can be characterized in thickness as well as length, width, area, or volume. Since Hara, et al., specify whether regular paper or pasteboard is being used, regular paper and pasteboard have different thickness, and thickness reads on size, the invention of Hara, et al., specifies whether a type of the image recording medium being used is a first type of predetermined regular size, or a second type of non-regular size, other than the regular size.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GEOFFREY T. EVANS whose telephone number is (571)272-2369. The examiner can normally be reached on 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on (571) 272 2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David M Gray/
Supervisory Patent Examiner,
Art Unit 2852

GTE